United States Department of the Interior

BUREAU OF RECLAMATION
Pacific Northwest Region
1150 North Curtis Road, Suite 100
Boise, Idaho 83706-1234

IN REPLY
REFER TO:

PN-6520
ENV-2.00

OCT 15 2002

Mr. John Iani
Regional Administrator
Region X, Environmental Protection Agency
1200 Sixth Avenue
Seattle WA 98101

Subject: Comments on the Preliminary Draft Columbia/Snake River Mainstem Temperature Total Maximum Daily Loads (TMDL)

Dear Mr. Iani:

We have reviewed the preliminary draft Columbia/Snake Rivers Temperature TMDL which EPA presented to the Federal Action Agencies on September 4, 2002. This letter outlines issues and concerns regarding development of the temperature TMDL. Our comments are enclosed.

In summary, Reclamation believes there is considerable technical work that needs to be completed before the Columbia/Snake Temperature TMDL is released for formal public comment. The public draft should include (1) an approach that considers the thermal effects of the existence of dams as part of the background load, (2) a strategy for a phased approach to the TMDL, which focuses on identifying what can be done to improve temperatures at each dam in the short term, and provides for operation of the mainstem dams in compliance with water quality standards in the long term, (3) an alternate approach for establishing target temperatures, possibly addressing only maximum numeric criteria in the initial phase, and (4) a load allocation to the Columbia River Basin upstream of international boundary.

We recognize that the implementation strategy for the TMDL will require an investigation of the potential benefits and costs of structural and operational measures which could be implemented at Grand Coulee in efforts to improve temperature in the mainstem Columbia River. A Reclamation commitment to completion of these studies at Grand Coulee Dam will be considered when reasonable TMDL targets have been developed, based on site potential with the dams in place. We would like to expect a similar commitment from EPA and the respective states to develop unified, consistent water quality standards for the Columbia River Basin which incorporate an element of economic feasibility into standards attainability in the regulated Columbia River system.

We look forward to continued cooperation in efforts to improve water quality conditions in the mainstem Columbia River. If you have questions about these comments, you may contact David Zimmer of my staff at 208-378-5088.

Sincerely,

Kenneth R. Peddle

for J. William McDonald
Regional Director

Enclosure

cc: Mr. Steve Allred
Idaho Department of
Environmental Quality
1410 North Hilton
Boise, ID 83706-1255

Brigadier General David A. Fastabend
U.S. Army Engineer Division
Northwestern, CENWD
P.O. Box 2870
Portland, OR 97208-2870

Mr. Tom Fitzsimmons
Washington Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600
(ea. w/cy of enclosure)

Ms. Stephanie Hallock
Oregon Department of
Environmental Quality
811 SW 6th Avenue
Portland, OR 97204

Mr. Stephen J. Wright
Administrator
Bonneville Power Administration
905 N.E. 11th Avenue
Portland, OR 97232

Reclamation Comments – Columbia Snake Rivers Temperature TMDL Preliminary Draft, September 13, 2002

General Comments

1. EPA staff chose to determine target temperatures for the TMDL based on estimated pre-dam "site potential" conditions. The process involved estimating the "site potential" temperature for each day of the year without mainstem dams, and then estimating the water temperature with the dams in place. The difference between water temperatures with the dams and the "site potential" without dams constitutes a violation of state standards. This strategy has significant nationwide ramifications, and we strongly disagree with its application in the highly regulated Columbia River Mainstem.

This approach conflicts with advice EPA received from the National Advisory Council for Environmental Policy and Technology in 1998, which recommended that water quality effects of large dams (and interstate highways), that would be impossible or virtually impossible to remove (not including their operation, maintenance, or potential modifications) should be included in TMDL background allocations. We believe that Grand Coulee Dam, which was authorized by Congress for public purposes prior to passage of the Federal Clean Water Act, should be treated in this manner in formulation of a temperature TMDL. The TMDL allocation should focus on potential temperature improvements that may be achieved by implementation of practical and economically feasible structural or operational modifications at existing facilities.

2. The controlling point for the water temperature TMDL is River Mile 4 on the Columbia River, based on the Oregon standard, which is the most conservative. That standard calls for the river temperature not to exceed 12.8 °C (55 °F) from October through May for salmon spawning and rearing. EPA also uses OAR 340-041-0205(2)(b)(A), section (vi) which states that no measureable surface water temperature increase resulting from anthropogenic activities is allowed in stream segments containing federally list Threatened and Endangered species if the increase would impair the biological integrity of the Threatened and Endangered population. The end result of this analysis is that the dams and associated reservoirs can not increase water temperature above the site potential for each day of the year. On the Columbia River, Grand Coulee Dam has the largest exceedance of up to 6 Centigrade degrees over site potential in the November time period, with John Day, Chief Joseph, and Wanapum dams following. The biological significance of fall and winter temperatures above site potential is not defined.

There are few practicable structural or operational options for cooling releases from Grand Coulee Dam, and those options that are available have no potential to reduce November temperatures, because thermal stratification normally breaks down in late summer. Temperature management opportunities that could be addressed in implementation planning studies include selective operation of the left, right, and third powerhouses, implementation of selective withdrawal on Banks Lake pump generators to allow withdrawal of only warm water to Banks Lake, and implementation of selective withdrawal on penstocks for release of cool water to the Columbia River downstream. Since these options only have potential for cooling Grand Coulee releases during the summer stratification period, which typically extends from July through mid-September, we believe that any temperature improvements required outside the summer stratification period would be unattainable. For these reasons, we recommend that the year-round site potential approach, with river mile 4 the controlling point, be replaced by numeric targets for seasonal peak temperatures, and based on biological effects.

3. We have a concern that operational and structural options for managing temperatures at Grand Coulee have very limited potential to cool release temperatures during critical periods of non-compliance with water quality standards, and that Reclamation ultimately will need some modification of the standards to provide for Clean Water Act compliance. We believe that the water quality standards language proposed by the Washington Department of Ecology to address water quality certifications for dam relicensing, may be something that might also be applied to the TMDL. The proposed changes will

reflect that (1) dams need to endeavor to meet standards, and (2) if, after working to attempt to meet the standards, the standards still can not be achieved, dams can pursue a site-specific standard or Use Attainability Analysis. However, this may not provide substantial relief, if EPA continues to exercise its authority to consider the most stringent downstream standards in TMDL development and approval, which the preliminary draft TMDL asserts was held by the U.S. Supreme Court in Arkansas v Oklahoma 503 U.S. 91 (1992).

A phased and adaptive approach to incorporating economic feasibility into TMDLs should be clearly articulated in both the draft TMDL and the implementation strategy before it goes out for public review. We would like to see some commitment by both EPA and the states to assist us in providing for operation of these congressionally authorized Federal facilities such as Grand Coulee Dam in compliance with state water quality standards.

4. It is our understanding that the State of Washington is required, under a TMDL lawsuit settlement agreement issued in Federal Court, to provide a summary implementation strategy with all TMDLs forwarded to EPA for approval, and that this requirement applies to the Columbia/Snake Rivers Temperature TMDL. We believe that the predevelopment modeling of the highly regulated Columbia/Snake River system to provide TMDL targets gives a false perception of what can be done to improve river temperatures at the dams. Reasonable assurance that the TMDL allocations can be achieved should be addressed in the implementation strategy, and we can provide no assurance that reductions of 6 Centigrade degrees can be accomplished at Grand Coulee during November, when in fact the temperature of FDR Lake is approximately 16 degrees Centigrade. We would also suggest that considering the expected difficulty in meeting the preliminary draft TMDL load allocations at Grand Coulee, the approach to allocating a margin of growth for point source permittees may need further consideration.

5. We would suggest that the lead sentence in the applicable standards section, "The water quality standards for temperature on the Columbia and Snake Rivers are quite complex", is an understatement of the issue. The three states and one tribe have adopted many numeric and narrative criteria based on a wide range of rationales, with apparently little consideration of overall watershed implications. Examples of problem areas include the approval of warmer standards upstream of Lake Roosevelt than have been approved for the lake itself, the failure of state and tribal standards for Lake Roosevelt to recognize the thermal stratification that exists there, and the conflicting standards for state and tribal waters in the river downstream of Grand Coulee Dam. The preliminary draft TMDL adds to the complexities by applying immeasurable 0.01 degree Centigrade load allocations to the mainstem dams, and would require maximum reductions during the winter months.

We understand that EPA is in the process of developing regional guidelines for state and tribal water quality standards. However, we are concerned that this process will not necessarily achieve a degree of basin wide consistency in the approach to environmental protection or lead to incorporation of a measure of economic feasibility to standards attainability in the regulated Columbia River system.

We recommend that a phased approach in the next draft of the TMDL include a commitment on the part of the Columbia basin states to convene an interstate compact or other appropriate forum to develop unified water temperature standards for the region. The standards should take into account both the need for protection of aquatic life, and the continuing reliance of the regional economy on the dams for affordable power, navigation, and irrigation water supplies. These unified standards could then be used as temperature targets in later phases of the TMDL planning process.

6. We believe that if it is to be fair and equitable, the mainstem TMDL must include an allocation to the Columbia River system upstream of international boundary. EPA has approved a number of state temperature standards in Columbia River tributaries upstream of Lake Roosevelt that are warmer than the Washington State and Colville standard of 16 °C for Lake Roosevelt. These include a 22 °C Idaho

standard and 20 °C Washington standard for the Pend Oreille River, a 22 °C Idaho standard for the Kootenai River, and a 20 °C Washington standard for the Spokane River. The Canadian temperature guideline for the mainstem Columbia River is a range of 22-24 °C. These standards were apparently approved without consideration of the obvious, that water generally warms as it flows downstream in the Columbia River basin. The TMDL addresses resource protection issues by extending the most stringent criteria upstream from mile 4 to International Boundary, but fails to allocate a load to the Columbia River system upstream of International Boundary, where high existing standards may preclude future improvements.

We recommend that the next draft of the TMDL include an allocation to the Columbia River basin upstream of international boundary, to be apportioned through future upstream TMDLs in the United States, and promoted in ongoing coordination efforts between EPA and Environment Canada.

Specific Comments

1. The general overview needs to provide detailed information on authorized mainstem project purposes and beneficial uses, including discussion on the existing treaty with Canada for hydropower and flood control. EPA should address potential flexibility in the existing legal framework for temperature improvement in this discussion.

2. The information provided in the draft TMDL is currently inadequate to fully provide detailed comments. Several of the major appendices including Appendix B, F and G are not available. These appendices provide critical material on target temperatures at each target site, temperature improvements needed at each dam, and temperature differences between successive target sites.

3. The draft temperature TMDL is unclear on whether dams are treated as point or non-point sources. For example under 1.1 Scope of the TMDL, the report states "This TMDL addresses dams, point sources, and non-point sources of thermal loading to the main stems themselves.", and under section 5.6.3.1 the report states "Therefore none of the load allocations in Table 5-3 apply to the tributaries or to non-point sources." However, Table 5.3 includes load allocations for the dams. Since load allocations are reserved for non-point sources this conflicts with the narrative. Clarification is needed throughout the report that dams are non-point sources.

4. The draft report briefly discusses the impacts of global warming and documents an annual 0.022 degree Centigrade temperature increase since 1953 but doesn't appear to incorporate this trend into site potential. This roughly equates to 1 degree Centigrade increase every 45 years!

5. Implicit margins of safety have been built into the draft TMDL by assuming the worst case discharges for point sources and using both 7Q10 and daily average temperatures for the dams. This provides conservative assumptions which are not quantified. The selection of margin of safety in these cases is arbitray and should be based on uncertainty analysis which is the accepted method. This analysis should include a sensitivity analysis of all parameters on both an annual and seasonal basis.

6. The TMDL, as currently proposed, allocates a load of 0.09 Centigrade degrees above site potential for Priest Rapids Dam, while allocating a load of 0.01 Centigrade degrees above site potential for all other dams in the system. The TMDL should explain how this results in a fair and equitable distribution of the overall problem.